Management of Atopic Dermatitis

A Preliminary Report

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• A treatment regimen for atopic dermatitis (disseminated neurodermatitis) which attempts to cope with the factors of dry skin and retention of sweat was successful in a series of 22 consecutive patients, all of whom remain under observation. Objectives of the treatment are: Preservation of the natural lipid surface film, avoidance of controllable stimuli to sweating, avoidance of greases and oils topically applied, control of bacterial infection in the skin, resolution of active dermatitis with topical corticosteroids in vehicles low in lipids or free of them, and correction of existing keratoderma. This program does not purport to alter atopic constitutional factors.

Among the 22 patients were seven with severe dermatitis requiring prolonged, continuous or intermittent, systemic corticosteroid therapy who were treated and had no exacerbation for periods up to ten months at the time of last report. The total daily dose of topical corticosteroid is small. Systemic corticosteroid therapy was withdrawn at the initiation of this treatment and has not been reinstituted. No untoward reactions have been observed.

Results to date warrant treatment and long term observation of additional patients to determine the ultimate value of this method.

COMPLETELY SUCCESSFUL TREATMENT of severe atopic dermatitis is yet to be achieved. Long-term systemic steroid therapy produces good control for many patients, but unfortunately it is associated with serious, undesirable metabolic complications. Topical corticosteroid therapy by surface depot (occlusive) therapy, often quite effective in inflammatory dermatosis, cannot be used for most patients with disseminated neurodermatitis because of the sweat retention factor. A treatment regimen which could control the skin lesion without using systemic corticosteroids, and obtain optimum effects from the highly active topical corticosteroids now available is desirable.

Since December, 1962, I have employed a treatment regimen which has proved superior to any in my previous experience. The program is designed to attempt to cope with the skin lesion itself and does not alter the many constitutional, humoral, physiologic and psychologic factors known to affect the clinical manifestation. It appears to be a means of making the patient more comfortable and of promoting a considerable degree of healing of the dermatitis.

The experiences reported here are empirical clinical observations in the form of case reports, and no conclusions are drawn or implied relative to the basic nature and cause of atopic disease.

That xeroderma, keratoderma, and sweat retention are commonly associated with atopic dermatitis is widely recognized and recorded in the literature. (Sulzberger,[4,5] Dewar and Fergusson,[1] Lobitz and Dobson[2]). The possible relation of these factors to atopic dermatitis has been repeatedly and clearly discussed in the writings of Sulzberger, who also lists "almost all greases and greasy ointments"[4] among the trigger factors which cause aggravation of atopic dermatitis.

OBJECTIVES OF TREATMENT

The treatment program used in the present study has the following objectives:

• Preservation of whatever natural lipid surface film is present in the patient. In this respect the management is analogous to that of any patient with "dry skin eczema," asteatotic skin, or xeroderma.

• Avoidance of all controllable factors which induce exacerbation such as: (a) stimulus to sweating by the conventional hot bath, medicated or otherwise. (b) All greases and ointments, and lipid emulsions. (c) Any topical medication which may possibly produce irritation of any kind.

• Healing of the active dermatitis with topical corticosteroids.

• Control of bacterial infection in the skin when present.

• Correction of the keratoderma if possible.

CLINICAL MATERIAL

Since December, 1962, twenty-two consecutive patients with atopic dermatitis seen in private practice have been managed by this program. The results have been most encouraging in all patients, and no patient has been lost from observation. The patients

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of most significance and the subject of this report are seven adults with intractable disease of many years' duration with only minor remissions that were usually induced by systemic corticosteroid therapy. All had received long-term corticosteroid therapy continuously or intermittently, and attempts to discontinue systemic corticosteroids had resulted in prompt exacerbation. All had been under competent dermatologic management, some of them in major medical institutions.

This group of patients therefore might be considered to be a stern challenge to any treatment. For example Sulzberger[4] noted that "cases persisting or beginning after the middle twenties are the most difficult to manage, usually have little tendency to spontaneous cure and fortunately are relatively rare." Obermayer[3] observed that in patients whose disease has persisted into the third decade of life, spontaneous remission is unusual, the disease being chronic and recalcitrant and the prognosis poor.

TREATMENT MEASURES THAT WERE NOT USED

None of the patients was put in hospital. Diet was not controlled in any way. Daily routine activities were not changed—working and professional people remained on their jobs, college students continued in school and housewives continued all routine activities. Psychological factors were not discussed. Sedatives and tranquilizers were not routinely used (see later comment). There was no change of marital status in any patient. All had lived in California for at least three years and there had been no recent change in environment.

REGIMEN OF MANAGEMENT

The treatment regimen was as follows:

- Systemic corticosteroids were discontinued.
- Bathing or washing, medicated or otherwise, was prohibited (except as indicated below), since this might remove natural lipid surface film. Also, since hot baths stimulate sweating, they were avoided on that ground also. Ocean swimming usually is well tolerated by persons with atopic dermatitis.
- The skin was "cleansed" daily with a lipid-free lotion (Cetaphil lotion, Texas Pharmacal.). It was applied once or more daily and was left to dry or was gently wiped off. Soap and water cleansing was permitted in axillary, inguinal-crural and perianal areas and also fingers and toes if not involved with dermatitis. This program was aesthetically acceptable to all patients.
- Greasy and lipid lubricants were not permitted. Although lubrication might be desirable, I have not found a "lubricant" which does not cause heating and itching of the atopic skin.
- Acutely inflammatory areas were assumed to be infected with bacteria, and antibiotics were given systemically for 10 to 12 days when indicated. The erythromycin series are routine except when others are indicated by culture and sensitivities.
- Corticosteroid topical therapy is carried out. The measures already noted are essential if maximum benefit is to be derived from active topical medication such as corticosteroids. Conversely, it can be said that much of the benefit from topical corticosteroids can be lost due to adverse concomitant local measures. I have used fluocinolone acetonide 0.01 per cent in propylene glycol as the major steroid. However, triamcinolone acetonide and fluorandrenolone should be effective, provided they are applied in lipid-free vehicles.

The maximum daily amount of fluocinolone acetonide solution 0.01 per cent used was 15 cc. (equivalent of 1.5 mg. of the active drug). Usually it was applied in two to three applications, with less being used as the involved area decreased. The solution was dropped onto the skin surface with a dropper and spread with the fingers—one drop covering about 25 square centimeters if the skin surface is reasonably intact. The solution should be rubbed gently until it seems to be rubbed in.

- Vitamin A, 50,000 units daily in adults, is given for at least six months.
- Thyroid extract U.S.P., 30 to 60 mg, is administered daily unless contraindicated. Protein-bound iodine and other thyroid function tests were not routinely done in this group of patients. However, my past experience has shown no consistent laboratory evidence of significant hypothyroidism in patients with atopic dermatitis, the PBI being in the range of 4 to 5 micrograms. Thus giving thyroid extract routinely is open to criticism in these circumstances. I have given it with the idea that it may potentiate the effect of the Vitamin A, as I do routinely with patients with keratoderma.
- Phenobarbital, antihistaminic and ataractic agents are given in the early phases when pruritis is still present. None of these seven patients required such medication for more than two weeks at the beginning of treatment.
- Exercise and exposure to direct sunlight are permitted only after decided improvement has occurred and the patient notices sweating on the surface of the skin in the affected area.

RESULTS OF TREATMENT

Results of treatment by the method outlined were as follows:

- Achievement of patient comfort—usually some degree of subjective improvement in less than two weeks.

• In all seven patients the disease remained in control without return to the use of systemic steroids.

• Major, but not complete, healing of the skin occurred, including disappearance of heavy lichenification in some areas, return of the skin toward normality, decrease of keratoderma, and apparent return of more normal lipid surface film. Such changes require from two to six months.

• Return of more normal sweating in three patients.

• Disappearance of pronounced white dermographism. Three patients volunteered this observation.

• Good results with small total daily dose of topical corticosteroids.

The short-term results of treatment have been good, but the ultimate evaluation must await long-term observation and treatment of many more patients. In this group the longest period of control, to the time of this report, was ten months (two patients) and the shortest was four months (one patient). The important fact is that none of the patients has needed or asked for resumption of treatment with systemic steroids.

Fluocinolone acetonide in propylene glycol solution was supplied through the courtesy of Kenneth Dumas, M.D., Medical Director, Syntex Laboratories, Palo Alto, California.

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ADDENDUM: Since the preparation of this report, seven additional adult patients with severe atopic dermatitis have been successfully treated.

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